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EXAMINER

VO, N

ART UNIT

PAPER NUMBER

2611

33

DATE MAILED: 04/28/97

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 1/21/97

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 03 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-48 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-48 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of Reference Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☒ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

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### **DETAILED ACTION**

1. This action is in response to applicant's response filed 01/21/97. Claims 1-48 are now pending in the present application. This application is made non-final. The examiner regrets any inconvenience this may cause.

### ***Oath/Declaration***

2. The new Oath or Declaration filed 01/21/97 is not acceptable since it is not signed by the inventors.

### ***Double Patenting***

3. The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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4. Claims 23-48 are rejected under the judicially created doctrine of double patenting over claims 1-12 of U. S. Patent No. 5,151,919, or claims 1-12 of U.S. Patent No. 5,295,153, or claims 1-40 of U.S. Patent No. 5,218,619, or claims 1-43 of U.S. Patent No. 5,430,760, or claims 1-35 of U.S. Patent No. 5,239,557, or claims 1-67 of U.S. Patent No. 5,353,352, or claims 1-17 of U.S. Patent No. 5,295,152, or claims 1-44 of U.S. Patent No. 5,237,586, since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: communication in a CDMA system using subtractive demodulation.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 14 and 15 are rejected under 35 U.S.C. § 102(e) as being anticipated by Blakeney, II et al (hereinafter simply referred to as Blakeney).

As to claim 14, see Blakeney, figure 1, numerals 12, 14, 16 for "first and second base stations"; numeral 18 for "remote unit". See figure 2, numeral 34 for "signal processing means"; numeral 34 for "analog to digital conversion means" (also see column 12, lines 61-63); numerals 46, 40, 42 for "CDMA processing means"; numerals 50, 52 for "encoder means"; numerals 38, 36, 30 for "CDMA transmitting means".

As to claim 15, with respect to an "access code", see Blakeney, column 26, lines 59-66, with respect to "base station code", and "traffic channel code", see Blakeney, column 19, lines 24-42.

7. Claims 23-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Gudmundson (U.S. Patent No. 5,295,153), or Dent (U.S. Patent No. 5,151,919), or Dent (U.S. Patent No. 5,218,619), or Dent (U.S. Patent No. 5,430,760), or Dent (U.S. Patent No. 5,239,557), or Dent et al (U.S. Patent No. 5,353,352), or Gudmundson et al (U.S. Patent No. 5,295,152), or Bottomley et al (U.S. Patent No. 5,237,586).

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The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Since the claimed subject matter of the subtractive demodulator is disclosed by all of the mentioned-above U.S. Patents, the pending claims 23-48 in this case are rejected over each of the mentioned-above U.S. Patents. For the purpose of simplicity, only the rejection over Gudmundson (U.S. Patent No. 5,295,153) is shown below. The rejections over each of the remaining mentioned-above U.S. Patents are discussed with the same reasons.

As to claims 23, 36, Gudmundson discloses the claimed limitations (see column 3, lines 43-68).

As to claims 24-29, 37-41, Gudmundson discloses the claimed limitations (see column 3, lines 53-68, column 5, lines 4-22).

As to claims 30-35, 42-46, Gudmundson discloses the claimed limitations (see column 3, lines 53-68, column 5, lines 30-45).

As to claim 47, Gudmundson discloses the claimed limitation (see column 3, lines 53-68).

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As to claim 48, Gudmundson discloses the claimed limitation (see column 5, 14-18).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2, 7-9, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blakeney in view of Falconer et al (U.S. Patent No. 5,159,608, hereinafter simply referred to as Falconer).

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As to claim 7, Blakeney discloses a cellular telephone system comprising steps of "decoding at the mobile station" (see column 13, lines 35-65; column 27, lines 11-47), "transmitting a signal from said mobile station the signal strength indications" (see column 4, lines 1-14; column 27, lines 15-39), "receiving the signal strength indications at one of the base stations" (see column 4, lines 5-10), "processing the indicated signal strengths at the network controller" (see column 14, lines 10-14).

Blakeney fails to disclose that each of the transmitted signals is encoded with a different "scrambling code". In an analogous art, Falconer teaches a CDMA system in which each of the transmitted signal is encoded with a unique scrambling code, so that it will completely eliminate cross talk and make it very difficult and costly to eavesdrop or track calls (see column 6, lines 47-52). Therefore, it would have been obvious to one of ordinary skill in the art to provide the teaching of "unique scrambling code" in Falconer to Blakeney, in order to completely eliminate cross talk and to make it very difficult and costly to eavesdrop or track calls (as suggested by Falconer).

As to claim 2, the rejection to claim 7 above is hereby incorporated as reference. With respect to the claimed limitation that the second base station receives the transfer indication from the first base station (instead, the above transfer indication is generated from the "network controller" in Blakeney's reference as recited on column 3, lines 62-68). However, those skilled in the art would have appreciated that in Blakeney's reference the second base station could receive the transfer indication from either the first base station

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or network controller. In addition, if the transfer indication is transmitted from the base station instead of network controller, less work is going to be done at the network controller. Therefore, it would have been obvious to one of ordinary skill in the art to modify Blakeney reference as recited in the claim, because it would reduce the cost of implementing the network controller. With respect to the claimed limitation that the first and second base stations employ different carrier frequencies, it would be appreciated by those skilled in the art that if a minimum frequency bandwidth or a non-interrupted handoff is preferred in Blakeney's invention, then the first and second base stations should use the same carrier frequency. Otherwise, if a minimum frequency interference is preferred or one of the two base stations can not provide signals for the mobile station on the frequency employed by another base station, then the different carrier frequencies should be incorporated. Therefore, it would have been obvious to one of ordinary skill to modify Blakeney's reference as recited in the claim, because the frequency interference would be greatly reduced.

As to claim 8, with respect to an "access code", see Blakeney, column 26, lines 59-66.

As to claim 9, with respect to "base station code", and "traffic channel code", see Blakeney, column 19, lines 24-42.



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As to claims 16-17, since Falconer teaches encoding an unique scrambling code for each transmitted signal, Blakeney as modified by Dent would read on the claimed limitation "the first and second scrambling codes have different numeric values".

10. Claims 1, 3-6, 10-13 are rejected under 35 U.S.C. § 103 as being unpatentable over Blakeney.

As to claims 1, 10, Blakeney discloses a **soft** handoff apparatus and method comprising limitations of "first and second base stations" (see base stations A and B of figures 8-9); "mobile station" 18 (figure 1); "network controller" 10 (figure 1); "first frequency" (see column 6, lines 6-8), "first code and second code" (see column 6, lines 17-20 for different code phase offsets, see also column 19, lines 25-35); "demodulated first and second signals" (see blocks 42-40 of figure 2, column 13, lines 35-65; column 27, lines 11-12); "signal processing means" 46 (figure 2); "CDMA processing means" 46 (figure 2), "first and traffic signals" (see column lines 23-35), "control message" (see column 19 for hand-off direction message, in-traffic message).

Blakeney fails to disclose that the second base station receives the transfer indication from the first base station (instead, the above transfer indication is generated from the "network controller" in Blakeney's reference as recited on column 3, lines 62-68). However, those skilled in the art would have appreciated that in Blakeney's reference the second base station could receive the transfer indication from either the first base station

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or network controller. In addition, if the transfer indication is transmitted from the base station instead of network controller, less work is going to be done at the network controller. Therefore, it would have been obvious to one of ordinary skill in the art to modify Blakeney reference as recited in the claim, because it would reduce the cost of implementing the network controller.

As to claim 3, with respect a "first base station code", a "first access code", a "second base station code" and a "second access code", see Blakeney, column 6, lines 23-27; column 19, lines 24-27.

As to claims 11-13, with respect to a "traffic channel code", see Blakeney, column 19, lines 3-10, 31-35, 60-64.

As to claims 4-6, Blakeney discloses limitations of "error correcting the demodulation signals" (see column 13, lines 62-65, "diversity combination" (see column 13, lines 54-65).

11. Claims 18-22 are rejected under 35 U.S.C. 103(a) as being obvious over Blakeney in view of Dent (U.S. Patent No. 5,151,919), or Dent (U.S. Patent No. 5,218,619), or Dent (U.S. Patent No. 5,430,760), or Dent (U.S. Patent No. 5,239,557), or Dent et al (U.S. Patent No. 5,353,352), or Gudmundson et al (U.S. Patent No. 5,295,152), or Gudmundson et al (U.S. Patent No. 5,295,153), or Bottomley et al (U.S. Patent No. 5,237,586).

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The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application of any unclaimed subject matter prior to the effective U.S. filing date of the reference under 37 CFR 1.131.

Since the claimed subject matter of the subtractive demodulator is disclosed by several mentioned-above U.S. Patents, the pending claims 18-22 in this case are rejected over Blakeney in view of each of the mentioned-above U.S. Patents. For the purpose of simplicity, only the rejection over Blakeney in view of Gudmundson (U.S. Patent No. 5,295,153) is shown below. The rejections over Blakeney in view of each of the remaining mentioned-above U.S. Patents are discussed with the same reasons.

As to claim 18, Blakeney discloses a **soft** handoff apparatus and method comprising limitations of "first and second base stations" (see base stations A and B of figures 8-9); "mobile station" 18 (figure 1); "network controller" 10 (figure 1); "first code and second code" (see column 6, lines 17-20 for different code phase offsets, see also column 19, lines 25-35); "demodulated first and second signals" (see blocks 42-40 of figure 2, column 13, lines 35-65; column 27, lines 11-12); "signal processing means" 46 (figure 2); "CDMA

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processing means" 46 (figure 2), "first and traffic signals" (see column lines 23-35), "control message" (see column 19 for hand-off direction message, in-traffic message).

Blakeney fails to disclose that the second base station receives the transfer indication from the first base station (instead, the above transfer indication is generated from the "network controller" in Blakeney's reference as recited on column 3, lines 62-68). However, those skilled in the art would have appreciated that in Blakeney's reference the second base station could receive the transfer indication from either the first base station or network controller. In addition, if the transfer indication is transmitted from the base station instead of network controller, less work is going to be done at the network controller. Therefore, it would have been obvious to one of ordinary skill in the art to modify Blakeney reference as recited in the claim, because it would reduce the cost of implementing the network controller.

Blakeney further fails to disclose demodulating, in an order of strongest to weakest signal strength, the first and second signals transmitted from the first and second base stations. In an analogous art, Gudmundson teaches a CDMA system employing CDMA subtractive demodulation in which the received composite signal is decoded in the order of strongest to weakest signal strength so that the signal decoding can be carried out efficiently and accurately (see column 3, lines 53-68, column 5, lines 59-62). Therefore, it would have been obvious to one of ordinary skill in the art to provide the teaching of

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"CDMA subtractive demodulation" in Gudmundson to Blakeney, in order to carry out the signal decoding efficiently and accurately (as suggested by Gudmundson).

As to claim 19, because Gudmundson utilizes "subtractive demodulation", Blakeney as modified by Gudmundson would read on the claimed subtracting step.

As to claims 20-22, the modified Blakeney fails to disclose the power adjustment at the base stations and mobile station as claimed. However, the Examiner takes Official Notice that such a power adjustment is known in the art so that disturbing ongoing traffic will be avoided (as described by the present specification, page 10, lines 1-7). Therefore, it would have been obvious to one of ordinary skill in the art to provide the conventional power adjustment to the modified Blakeney, in order to avoid disturbing ongoing traffic.

### ***Response to Amendment***

12. Applicant's arguments with respect to claims 1-48 have been considered but are deemed to be moot in view of the new grounds of rejection.

#### **Response to applicant's remarks regarding claims 23-48:**

In this section, applicant argues that the U.S. Patent No. 5,295,153 is no longer applicable as prior art upon the filing of a Declaration to claim priority from the above U.S. Patent 5,295,153. The examiner, however, disagrees with applicant. Applicant's attention is directed to paragraph No. 7 above, which states that the rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any

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invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

*Response to applicant's remarks regarding claims 14 and 15:*

With respect to claim 14, applicant argues that the cited Blakeney discloses the provision of a single demodulated signal produced by diversity combining the signals received from two base stations. From that, applicant goes to the conclusion that Blakeney fails to disclose generation of two demodulated signals, wherein each signal is associated with each of the two base stations. The examiner, however, disagrees with applicant's position. Although Blakeney discloses diversity combining two signals received from two base stations, these two signals, **before they are combined**, do read on the claimed first and second demodulated signals. It should be noted that the demodulated signals as claimed are nothing but decoded signals (see the last paragraph of applicant's claim 1). Since the receivers 40 and 42 in Blakeney are decoded receivers (see column 14, lines 27-34), the two output signals of the receivers 40, 42 are decoded signals and thus read on the demodulated signals as claimed.

With respect to claim 15, applicant argues that the "base station identifications" in Blakeney are not used to obtain demodulated signals. The examiner, however, disagrees with applicant's position. Blakeney does disclose decoding the numerical values using the first and second codes to obtain demodulated data signals received from the first and

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second base stations. Applicants' attention is directed to column 12, line 61 to column 13, line 21. In this case, the claimed "numerical values" broadly read on the digitized signal output from the A/D converter included in the receiver 34 (see column 12, lines 61-68), and the claimed "first and second codes" read on the PN sequences in the receivers 40 and 42 (see column 13, lines 1-21). **Since each of the PN sequences is associated with a base station**, the "base station identifications" in Blakeney do read on the first and second codes as claimed.

Response to applicant's remarks regarding claims 2, 7-9 and 16-17:

In this section, the examiner's comments regarding claim 14 as set forth above is first hereby incorporated by reference. In addition, in response to applicant's argument that the action did not provide any evidence that Blakeney faces the problems of cross talk, eavesdrop or track calls, the examiner believes that Blakeney may have such problems since Blakeney does not use "scrambling codes". Therefore, by providing the teaching of "unique scrambling code" in Falconer to Blakeney, it completely eliminates cross talk and makes it very difficult and costly to eavesdrop or track calls (as suggested by Falconer).

Response to applicant's remarks regarding claims 1, 3-6, and 10-13:

In this section, the examiner's comments regarding claims 14-15 above are hereby incorporated by reference.

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For the foregoing reasons, the examiner contends that the claims are not allowable over the cited prior art.

***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Vo, whose telephone number is (703) 308-6728. The Examiner can normally be reached on Tuesday-Friday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Monday.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Nguyen Vo  
April 26, 1997



NGUYEN VO  
PATENT EXAMINER  
GROUP 2600